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IN THE

Supreme Court of the United States

OCTOBER TERM, 1933.

No. 611.

ELECTRIC CABLE JOINT COMPANY, *Petitioner,*

v.

BROOKLYN EDISON COMPANY, INC., *Respondent.*

BRIEF FOR PETITIONER ON THE MERITS.

D. ANTHONY USINA,
MELVILLE CHURCH,
Counsel for Petitioner.

February 13, 1934.

PRESS OF BYRON S. ADAMS, WASHINGTON, D. C.

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I.

THE OPINIONS OF THE LOWER COURTS.

The opinions in the Circuit Court of Appeals for the Second Circuit in this case are reported in *Electric Cable Joint Co. v. Brooklyn Edison Co.*, 66 Fed. 2nd, 739. A conflicting opinion of the Circuit Court of Appeals for the Sixth Circuit is reported in *Metropolitan Device Corp. v. Cleveland Electric Illuminating Co.*, 36 Fed. 2nd, 477.

II.

JURISDICTION.

The grounds for jurisdiction are as follows:

1. The final decree to be reviewed was based on the opinion of the Circuit Court of Appeals for the Second Circuit, dated and entered September 21, 1933.

2. This decree was rendered in a suit in equity brought under the patent statutes to determine the validity and infringement of certain Letters Patent.

3. The statute under which jurisdiction is invoked is U. S. Code Title 28, Sec. 347, as amended.

4. Certiorari was requested because of conflicting decisions in the Circuit Courts of Appeals, under Rule 38, paragraph 5b.

III.

STATEMENT OF THE CASE.

Proceedings in the Lower Courts.—This is an action for infringement of a patent of Torchio 1,172,322 of February 22, 1916. The claim sued on, No. 4, is for "an electric cable" including the fine conductor and certain joints therein. The patent was the basis of a suit filed February 27, 1926, in Cleveland, entitled Metropolitan Device Corporation v. Cleveland Electric Illuminating Company. The District Judge held the claims sued on (Nos. 3 and 4) invalid for lack of invention and dismissed the complaint.

On appeal to the Circuit Court of Appeals for the Sixth Circuit, this decree was reversed by a unanimous decision and the claims were held valid and infringed. A copy of the opinion of the Court of Appeals for the Sixth Circuit, handed down December 6, 1929, is in evidence as Exhibit 8 (p. 369). There was a petition for rehearing, but it was denied. A decree (Exh. 9, p. 374) was rendered September 12, 1930.

The patent was assigned to one Perfler with all claims for past infringement, November 1, 1930; and Perfler's

rights were transferred April 18, 1931, to the present plaintiff (Exhs. 10 and 11, pp. 377, 378).

The nominal defendant here is Brooklyn Edison Company. However, in answer to interrogatories (Exh. 15, p. 384), answer 10, defendant admitted that "General Electric Company and General Cable Corporation are contributing to the defense * * * are participating in the control of the defense."

This suit was tried in the Eastern District of New York and dismissed by Judge Inch who held the claim in suit invalid. On appeal to the Circuit Court for the Second Circuit, the decision of the District Court was sustained by Judges Augustus N. Hand and Thomas W. Swan, Martin T. Manton dissenting (66 Fed. (2) 739).

Patent in Suit. The patent in suit relates to joints for high tension electric cables, that is, for cables carrying electric current at high voltage. The current is carried in a conductor comprising a wire or a group of wire strands enclosed in a lead sheath and insulated from contact with the sheath by layers of paper wrapped individually about each conductor and impregnated or saturated with an insulating fluid, such as an oil. Commonly three conductors are enclosed in a single sheath and these conductors are wrapped with oil saturated paper wrappings so as to be insulated from each other as well as from the sheath.

These cables are commonly used in underground conduit systems and as it would be impossible to make and install a continuous cable sufficiently long for the entire circuit, the cable is made at the factory in sections, generally about 300 feet in length, sealed at their ends to preserve the insulation.

When the cables are installed the sections are drawn end to-end into underground conduits with the ends in manholes, located generally at street intersections. The adjoining ends of the cable are then joined to form a continuous cable by cutting away the lead sheath for a short distance from

the ends of the conductors, welding or splicing the conductors, then wrapping them with an insulating wrapping of fabric and then spanning the cut away portions of the sheath with a lead sleeve which is sealed to the ends of the sheath. The continuity of the conductors, insulation and sheath is thus preserved.

A good metal connection between the conductors capable of carrying the current easily is not difficult. The difficulty is in forming an insulation in the joint which will prevent current leaking or striking through the insulation from a conductor to the lead sheath and in avoiding deterioration of this insulation, at the joint insulation or in the adjacent parts of the cable that would permit such leakage or striking through and destruction of the cable.

The effectiveness of the paper wrapping insulation both in the cable length and in the joint depends on maintaining it saturated and filled with the insulating fluid or compound (R. pp. 43-46). Some of this insulating fluid may be lost by bleeding, or escape when the joints are being made. When in use, the electric cables are subject to fluctuations in temperature, the temperature rising when the quantity of current passing through the conductor increases and falling as the current decreases, and, as the temperature rises the insulating fluid expands and is exuded from the cable wrapping, and when the cable cools it is re-absorbed (R. pp. 47-58). But, in the expansion the cable sheath may be stretched and distorted and as the cable cools the fluid in returning may not be sufficient to completely fill the cable and voids are formed, particularly in or near the joint, through which the current may strike from the conductor to the sheath and destroy the cable.

The patentee found that the usual insulating compounds of the cable, for example, paraffin, permitted the formation of voids due to the contraction and hardening on cooling and thus permitted a breaking down of the insulation after having been joined in continuous lengths and placed in use (R. p. 353, ls. 63-68).

The patentee solved this problem by impregnating the paper wrapping in the joint with a fluid that would flow freely at the temperatures of the cable and by ensuring against a deficiency through loss or displacement by providing at each cable joint a reservoir of fluid free to flow into the cable and in sufficient excess to make up losses and deficiencies (R. p. 46).

A specific embodiment of the invention is shown in Figs. 1 and 2 of the patent (R. p. 254) as applied to cables having conductors 1, 2 and 3, having an insulation of wrapped impregnated paper 4 and an enclosing lead sheath 7. In joining two lengths of cable according to the invention, the lead sheath 7 and the insulating wrappings are cut back a sufficient distance from the abutting ends of the cables to permit the conductors 1, 2 and 3 of one cable to be joined to those of the other. The exposed portions of the cables are then rewrapped with a pervious wrapping 5 and the ends of the sheaths 7 are hermetically joined to a connecting sleeve 8 having a receptacle or reservoir 10 communicating therewith and filled with insulating fluid.

Outside of this, the patentee Torchio applied an envelop 13 of wire gauze and a permeable wrapping 14 of twine. These subordinate features are specifically claimed in some claims of the patent but are not included in claim 4, upon which this suit is based. This claim, 4, is as follows (R. p. 256):

> "4. An electric cable comprising a sheath, a line conductor having a joint, a body of pervious insulating material inclosing said joint, the said sheath being removed for a distance sufficient to expose said pervious body, a sleeve of impervious material of greater diameter than said body, inclosing the same and hermetically united at its ends to said cable sheath, a receptacle communicating with the interior of said sleeve, and an insulating fluid adapted to permeate said pervious body contained in said receptacle and the space between said body and said sleeve."

A disclaimer was made, prior to the suits in the Sixth and Second Circuits, as follows (R. p. 257):

> "1,172,382.—Philip Torchio, New York, N. Y. Protective Device for Electric-Cable Joints. Patent dated February 22, 1916. Disclaimer filed February 11, 1927, by the assignee, Thomas E. Murray.
>
> "Hereby makes disclaimer of the improvement described except for electric cables which comprise a line conductor, insulating wrapping permeated with insulating compound and a sheath of flexible inelastic metal constituting a unitary product of manufacture and commerce which is portable and capable of being drawn through conduits; and except as to an insulating liquid which is fluid at ordinary working temperatures of such cables and in quantity sufficient to supply at all times the demands made by the cable in use, and by the joint."

The Circuit Court in the Sixth Circuit held the claim valid and that Torchio discovered that the destruction of the cable wrappings has been due to faulty insulation, "dielectric loss", caused in part by bleeding of the insulating compound from the exposed cable ends during instailation, and by the "breathing" or alternate expulsion of the insulating fluid on heating and drawing it in on cooling (R. p. 372).

The combination described in claim 4 with an electric cable of the above indicated type, of a receptacle communicating with the interior of the sleeve and an insulating fluid adapted to permeate the pervious body of insulation contained in the receptacle counteracts the destructive action of bleeding and breathing and is not found in any prior publication or patent. It is present in the defendant's infringing cable joint.

Defendant's Infringing Cable. The infringing device (R. pp. 54-56, 60, 61, 403) is substantially the same as in the patent and consists, as shown on page 403, of conductors 1, 2 and 3 and having impregnating wrappings 4 and lead sheaths 6 cut back from the ends of the conductors to be

joined, the ends of the conductors then being joined by copper sleeves 9, again covered with wrappings 12 and the cut away part of the sheath replaced by a sleeve 19 which is hermetically sealed at its opposite ends to the sleeve. The interior of the sleeve is filled with oil and communicates with an expansible reservoir 17, or several cable sleeves may be in communication with a common reservoir 17, as shown on page 404. This infringing device has the reservoir or receptacle, the insulating fluid and all of the other elements of the combination defined in claim 4.

The Prior Art. The Circuit Court of Appeals in the Sixth Circuit found (R. p. 373) that although the various elements of the combination may have been old, they were not old in combination. This is equally true of the additional patents and publications considered by the Circuit Court of Appeals in the Second Circuit, no one of which shows the entire combination of the cable defined in the claim with a receptacle and a fluid insulating filling in the receptacle and in the spaces within the cable joint. This additional art is as follows:

British patent to Geipel No. 11,280 of 1894 (R. pp. 605-608) merely shows conductors brought into a box *a* of "metal, wood, pot, or otherwise", then bared of insulation and the exposed ends then joined within the box by connectors *f*, after which the box is filled with oil, wax or bitumen. The cable joint has nothing in common with that of the Torchio patent in suit as will be apparent from a comparison of its construction with the description in claim 4. Although oil is used, there is no reservoir or receptacle as defined in the claim in issue. The Geipel construction is substantially the same as that of the British patent to Abel No. 11,932 of 1887 (R. pp. 333-337) discussed in the decision in the Sixth Circuit (R. p. 373). The Geipel patent was not discussed by defendant's witness but was merely offered in evidence. It is merely mentioned in the opinion of the Second Circuit

but is not definitely stated to be an anticipation, and it clearly is not.

United States patent to Lemp No. 534,802 of 1895 (R. pp. 611-614) shows a transformer or induction coil comprising a hollow endless or annular shaped tube A of square cross section forming the secondary of the transformer and enclosing a primary coil F, Fig. 2, and filled with a heavy cylinder oil from a reservoir J. This transformer is not in any sense a cable, and there is no joint construction. There are no wrappings of pervious material. The defendant's witness did not refer to nor discuss this patent in his testimony. It clearly does not show the combination of the Torchio patent nor of the claim in question and, although mentioned in the opinion of the Second Circuit, was not therein stated to be an anticipation of the claim in issue.

The "thesis" by deGelder, a student of the Academy at Delft, Holland, was mentioned by the Court of the Second Circuit as showing a breathing of a cable under temperature changes. This thesis is a sort of graduation essay of which copies are usually filed in the library of the academy and given to other libraries where they are stored in dusty archives and never seen except in some such case as this in which one is drawn from its obscurity and presented as having been a substantial contribution to the art.

The deGelder thesis describes the Amsterdam Electric System using cables of from 500 volts (R. p. 619) to 3000 volts (R. p. 624). This is not the type of high tension or high powered cable using upward of 15,000 volts to which the Torchio patent is directed; and a joint that would operate successfully at these lower voltages would not operate successfully at the higher voltages contemplated by Torchio.

deGelder states that in certain types of joint the sleeve after being sealed to the sheath is filled with a hot mass of insulating material (R. p. 626) of the same consistency as insulating material in the cable itself which is not "too soft or too thinly liquid" (R. p. 618).

He speaks (R. p. 623) of the mass "which has melted locally" upon a contact which would indicate that the material is solid when cooled.

The description of the joints and of the insulating material is obscure. Certainly there is no disclosure whatsoever of a receptacle in contact with the joint and filled with an insulating fluid so that the latter would be supplied to the joint as in the combination defined in the claim in issue. The Circuit Court of Appeals in the Second Circuit found that this thesis by deGelder disclosed the phenomenon of breathing. The only possible basis for this is on pp. 629-630 which state that "if the mass is pressed out because of too strong heating, it is highly probable that, when contraction takes place, water will be sucked in, even though the junction box may be well sealed". This is not breathing as the term is used in this art. And further, deGelder states, that "the mass will not flow from correctly assembled junction boxes" (R. p. 630) "until the temperature of the cable has become 90° C., which doubtless will not be permitted to occur for other reasons" (90° C. is 194° F.).

Further, deGelder advocates restricting the temperature changes of the cable to a very small percentage 25° C. (45° F.) so as to avoid deterioration or drying out; but he does not disclose any combination similar to that of Torchio, that is, a receptacle and insulating fluid to maintain a supply of fluid in the joint subjected to wide temperature changes.

An article by Vernier in the Journal of the Institution of Electrical Engineers 1911 (R. pp. 640-718) discusses cables and joints, the joints being described on pages 653-658. None of these joints shows a receptacle, much less a receptacle filled with oil and connected to the sleeve of the cable. Of the various types of joint construction, that shown in Fig. 12 (page 654) is the one nearest to that of the Torchio patent as, in this figure, the conductors are shown as wrapped with insulating fabric. These insulat-

ing wrappings are boiled in resin oil and are saturated. The Article states (p. 655) that the joints of either of the types shown on page 654 may be filled either with an insulating oil or a joint box compound of a solid or viscous nature. It states that "oil is objected to by many engineers, who fear its being absorbed at the cores of the cables and who therefore insist on a joint box compound being used." But the author states that he has yet to meet a case where breakdown has occurred from this cause and that the leakage should be very small and, therefore, advocates the use of oil because he states there is no danger of leakage if the cables are impregnated under vacuum. The author recommends oil because he denies that it will be absorbed by the cores of the cables from the joint. He would, therefore, not provide a receptacle to supply the oil. On page 656 he suggests against the objection that oil may leak from the joint into the cores of the cable, that a viscous joint box compound be used. He states, however, that "an insulating oil could be employed, provided the question of possible leakage from the joint box is guarded against."

The above should be sufficient to show that so far as the problem of leakage of insulating compound from the joint into the cable is concerned, Vernier proposed using oil in the joint where there was no liability of its being drawn into the cable, but proposed to use a solid or viscous compound if there was a tendency for oil to be drawn from the joint into the cable.

The Circuit Court of Appeals in the Second Circuit entirely overlooked the above statements. It quoted from page 655 with reference to the filling of the joint with oil, that the outer wrapping about the conductor insulations "be put on in the form of bands at intervals along the cores as in Fig. 14 rather than wrapped over the whole length of the cores, as this, especially if a solid joint box compound be used, will leave large air spaces all round the cores which the compound cannot penetrate, and there is further a

danger of the oil drying out of the insulating tapes. The cores should also be separated at intervals by similar bands of insulating tape so as to allow the greatest freedom of access to the oil which will keep the insulating tapes constantly impregnated, and this will be greatly assisted by the constant temperature changes which the cable undergoes under changes of load." And the Court then concludes that this indicates that Vernier understood the breathing of the cables.

These expressions to which the Court had reference relate solely to the saturating of the joint wrappings while the joint is being built and not to the maintenance of the joint insulation against the seepage or suction into the cable itself. Vernier had but two solutions against this latter phenomenon, one, to use oil where it did not exist and, two, to use solid or viscous compounds where it did exist. He did not use a receptacle to supply additional quantities of oil to maintain the joint filled against the withdrawal or suction of the oil in those cables where this occurred. The receptacle is, however, an element of the combination in Torchio, performing an important function and it is not disclosed in the Vernier article.

A "pot head" installed in one of the sub-stations of the Consolidated Gas Company in Baltimore in 1911 or 1912, was filled with oil and this has been cited as an anticipating prior use. A pot head is a terminal of the cable at which the lead sheath ends and through which the conductors project so that they are accessible for connection (R. pp. 233, 234). There is no conductor joint in the pot head itself.

In the construction in the Baltimore sub-station the cable was brought from an underground duct upwards and connected above the pot head to a bus bar. The lead sheath and insulating material were removed from a considerable length at the top and the end of the sheath was belled as at B in the sketch (R. p. 497) described on pp. 243, 244. The cut off point was about 40 feet from the bottom, the con-

ductors and insulation passing upwardly through the open end of this belled construction. It was then noticed that some of these terminals or pot heads started to dry out and additional impregnating oil of the type used in the cables themselves was poured in to replace the loss. These pot heads, however, did not have the wrapped cable joints, the lead sleeve and the oil filled receptacle of the claim in issue. They had nothing to do with cable joints as is evident from the fact (R. p. 90) that the Company refused to fill the joint sleeves with oil and continued to fill them with paraffin (R. p. 90).

The most that the additional references considered by the Circuit Court of Appeals in the Second Circuit disclosed was the idea of an oil as an insulating liquid in cables and joints. The use of oil was, however, described in various patents before the Sixth Circuit Court of Appeals as, for example, in the Watson patent (R. pp. 354-363) which, although not sufficiently early to be an anticipation was held by the Sixth Circuit Court of Appeals not to disclose the *combination* of the claim in issue, which is not broadly for the use of oil but for the use of a receptacle filled with an insulating fluid and connected to the sleeve of the joint in combination with the other named elements. The dissenting opinion of the Second Circuit Court of Appeals agrees with the unanimous decision of the Sixth Circuit Court of Appeals that claim 4 of the Torchio patent here in issue is not disclosed by the patents, publications and uses which merely disclose the use of oil. It is significant that the defendant uses the receptacle of the claim in issue and that none of the prior art cited uses or suggests a receptacle in combination with a cable joint, of the type claimed.

A number of other publications not before the Court in the Sixth Circuit were put in evidence in the suit in the Second Circuit. These are articles from The Electrician (R. pp. 722, 723); a report of Rabe on the Boston installation Exhibit "J" (R. pp. 512, 518C, 518E), and a quotation from Pender's Hand Book (R. p. 247).

These are all different descriptions of the same type of joint and describe the filling of the joint with a material heated sufficiently so that it will flow.

The apparatus during filling is shown on R. pp. 518C, Sketch G; 722, Fig. 3. After filling the funnel and stand pipes are removed leaving the joint "J" without a reservoir of any kind. The use of filling compound in these joints is summarized in the Pender quotation (R. p. 247). which stated that solid compounds were objectionable because on shrinking they left air-holes and the better practice was to use a viscous compound which never sets. What is evidently meant by a viscous compound is one sufficiently plastic so that it will yield rather than break. What is amply clear is that none of these disclosures of the so-called "English practice" used an oil reservoir or receptacle, not only an essential element of the combination of the claim in issue, but also used by defendants and essential if an oil or fluid insulating material is to be used under those conditions in which oil is drawn from the joint into the cable.

Torchio's Prior Knowledge. Defendant's witness, Woodrow, offered, over objections, certain records concerning Torchio's knowledge of what had been done in Germany and in a certain British installation near Boston. This evidence was admitted on the explanation of defendant's counsel (R. p. 126) that it was not to prove invention by others but to show that Torchio's patent could not cover the things that he had thus discovered. These records show, however, merely the use of solid compounds and semi-liquid (*i. e.* semi-fluid—semi-solid compounds). None of them shows any more than has been discussed above, namely the use of semi-liquid compounds without a reserve receptable. Torchio's claim in issue here, however, is for the combination of the other features of the specified joint of a reserve receptacle containing a supply of fluid insulating material. It is unnecessary to show prior knowledge of Torchio to show that this combination claimed does not cover joints

having no receptacle and filled with semi-liquid compounds.

This evidence, however, does show that Torchio did not find these prior joints satisfactory for high tension cables. It was only after several months (July, 1914 to February, 1915) of experimenting with Rabe and Woodrow that he arrived by a happy accident at the discovery of the causes of failure and the extent of the migration of the compound and his solution of this difficulty by a combination of a reserve receptacle and a fluid compound or insulating medium (R. pp. 144, 145, 159-161, *et seq.*).

The record also shows that in spite of Torchio's knowledge of the prior installations he was at first adverse to the use of oil for impregnating the joint.

Notice or Laches. Defendant introduced two advertisements of 1927 and 1925 respectively, Exhibits BB, CC and a letter written in 1927 by Metropolitan Device Corporation, Exhibit "S", former owner of the Torchio patent. These advertisements and letter were in effect to promote the use of plaintiff's cable joint and pointed out that the patented feature was the electrostatic shield or copper gauze stocking; this being the wrapping 13, 14 of metal about the insulation wrappings in the joint. This is an element of some of the claims of the patent but not an element in claim 4 here in issue. Neither the advertisements nor the letter state that this electrostatic shield or copper gauze stocking is the essential feature of the patent and it manifestly is not or it would not have been omitted from some of the claims.

Position of Thomas E. Murray. The patent in issue was at one time owned by Thomas E. Murray. For a brief period (two weeks) in 1922 after Mr. Murray acquired the patent he was a member of the executive committee of the directors of the defendant company. He was both owner and director from February 24, 1925, when he again became a director, to February 11, 1927, when he ceased to own the patent. The period of accounting under the present

action began April 23, 1925. In the interval of time when he ceased to be a director, prior to the period of accounting under the present action, he was President of Thomas E. Murray, Inc., a corporation which was employed by defendant in a consulting capacity and in certain construction work on a generating station, but not including distribution lines such as the cables and joints here discussed.

During the six year accounting period beginning April 23, 1925, he was not, nor was his company, employed in engineering and construction work for defendant. During approximately two years at the beginning of the six year period he was both patent owner and member of the executive committee of the directors. There is no evidence to show that the directors or the executive committee had anything to do with the details of construction of the cables and cable joints, nor any evidence from which this could be assumed. Much less is there any evidence of any action on the part of Thomas E. Murray which would give the defendant company any right to use the patent.

IV.

SPECIFICATION OF ERRORS.

(1) The Circuit Court of Appeals for the Second Circuit erred in finding and holding the patent anticipated and invalid.

(2) The Circuit Court of Appeals for the Second Circuit erred in not finding that the patent is valid and infringed.

(3) The Circuit Court of Appeals for the Second Circuit erred in dismissing plaintiff's suit.

V.

ARGUMENT.

Summary. The claim is a measure of the invention interpreted in the light of the specification and the disclaimer. Additional elements cannot be interpolated to narrow the

claim to avoid a charge of infringement. Nor is the claim anticipated unless the combination of all material elements is found in the prior art. The defendant's joint contains all of the elements of the combination including the ~~narrow~~ reserve receptacle. It is immaterial that it omits the elements described in the patent but not included in the claim in suit or that it uses a receptacle of different form, the function being identical. None of the prior art disclosures show the combination of a reserve receptacle in a sealed joint as claimed. The combination is novel and infringed.

The combination is a novel invention. Whether the various elements are new or old is immaterial. The prior art did not teach or suggest the use of a fluid insulating medium and a reserve receptacle to replace the fluid that might flow from the joint. It was this combination that rendered the joint successful. Defendant does not use the construction of the prior art but uses every element of the combination claimed.

There has been no laches by this plaintiff or his assignors. Nor has there been any action by plaintiff nor those from whom he obtained title that excuses infringement or estops plaintiff from enforcing his rights against the defendant.

The Claim as a Measure of Invention. It is well established that the measure of a patent is to be found in the claims, with resort to the specification only where this is necessary to understand any claim. The Statute (R. S. 4888) requires that the inventor after pointing out the best mode of applying the principle of the invention shall "particularly point out and distinctly claim the part or combination" which constitutes his invention or discovery. In most patents there are several such parts or combinations separately claimed.

The claims "so mark where the progress claimed by the patent begins and where it ends that they have been aptly likened to the description in a deed which sets the bonds to

the grant which it contains." *Motion Picture Patents Co. v. Universal Film Mfg. Co.*, 243 U. S. 502 (U. S. Sup. Ct. 1917).

Not only is a patentee limited to that which he has clearly claimed without the privilege of incorporating other elements therein in order to save its validity; but so also is the public bound to regard the claim as the measure of the monopoly and not entitled to interpolate therein any additional elements that may have been introduced into the specification.

As stated in Fay v. Cordesman, 109 U. S. 420, 421—

> "The claims of the patent sued on in this case are claims for combinations. In such a claim, if the patentee specifies any element as entering into the combination, either directly by the language of the claim or by such a reference to the descriptive part of the specification as carries such element into the claim, he makes such element material to the combination, and the Court cannot declare it to be immaterial."

The disclaimer excludes all joints other than those wrapped with a wrapping permeated with insulating compound and excludes all cases except those in which the insulating liquid is fluid at ordinary temperatures and sufficient to supply at all times the demands made by the cable in use and by the joint. This disclaimer expressly limits the claims to what would be employed therein from the specification.

> "Authority to make such a disclaimer is beyond question, if it be made in writing and is duly attested and recorded in the Patent Office. When so made, attested and recorded, it becomes a part of the original specification to the extent of the interest of those who make it; but the provision is that it shall not affect any action pending at the time of its being filed, except so far as may relate to the question of unreasonable neglect or delay in filing it." 16 Stat. at L. 206, R. S. sec. 4917.

> "Pending suits may proceed, but the disclaimer, when recorded, becomes a part of the original specification, and must be taken into account in construing the patent, and in ascertaining the rights of the parties to the suit, unless it appears that the effect of the disclaimer is to enlarge the nature of the invention, and prejudice the rights of the respondents."
> (*Dunbar v. Meyers*, 94 U. S. 187, 193).

Such a disclaimer may be admitted at any time before Decree. For example, it was admitted after the argument and was held proper by the Supreme Court in the case of Carnegie v. Cambria, 185 U. S. 403.

Novelty. None of the prior art disclosures before the Circuit Court of Appeals in the Second Circuit shows this combination of a specific type of cable joint and a receptacle for a reserve supply of fluid insulating material. The patent to Lemp discloses an oil reservoir for a transformer, the oil serving primarily as a cooling medium. The oil used is intended merely to keep the apparatus from overheating. Defendant offered no testimony concerning this Lemp patent. Dr. Whitehead in testifying about the use of reservoirs (p. 208) did not think this Lemp patent worth referring to, but cited "the water bottle in the corner of the room", oil cups on machines and "overhead tanks of all descriptions." He considered the potheads of the Baltimore consolidated cables to be reservoirs.

But the invention claimed is not a reservoir, but a combination of a particular cable joint, combination which includes a reservoir as one element only of the combination. A combination is not anticipated by finding any one element in the prior art, nor does the fact of its use of overhead tanks and reservoirs generally suggest the use of an oil reservoir to overcome the particular conditions that Torchio found to impair the insulation of cable joints. Nothing could be stronger evidence of this than the fact that the very parties who used the pothead in the Baltimore construction continued to use paraffin in its cable joints

and refused to fill the joint sleeves with oil. Surely, if the potheads are reservoirs, as defendant's witness said they were, and the very parties who used these potheads, failed to use reservoirs in the cable joints, this is a practical demonstration that the use of an oil reservoir on cable joints was not obvious at the time of the Torchio invention.

In all of the other cable joints, solid or semi-solid,—semi-liquid compounds were used except under such conditions, either of voltage or temperature, as precluded any migration or loss of the material from the joint sleeve, and when semi-liquid materials were advocated, it was merely to avoid the voids that would be left in a rigidly solid material on cooling and shrinking, and from the context it is amply evident that the semi-liquid advocated was not one that would flow readily, but one sufficiently plastic to yield, rather than to crack under expansion and contraction. But the fact is incontrovertible that in no case were any of these joints provided both with oil or fluid filling, or with an oil or fluid receptacle to supply any deficiencies through loss or migration.

Whether the various elements of the joint, the fluid and the oil reservoir are separately and individually old or new, is immaterial. The invention is in the combination of these elements. It is elementary that a combination cannot be anticipated by showing its several elements to be old. Parks v. Booth, 102 U. S. 96, 104, 105.

The Invention. The combination is not only new, but it is the result of invention. In all of the prior patents and publications relating to cable joints, the general remedy for preventing loss of insulating compound from the joint was to use a compound that would not flow. Oil might be used wherever there was no tendency for it to flow. Semi-liquid compounds were advocated as improvements on solid compounds only because the latter were liable to crack or form voids under temperature changes, whereas a semi-liquid or plastic filling would have sufficient pliability to

avoid cracking or the formation of voids on shrinking. But these semi-liquid compounds were obviously not liquid nor fluid, particularly where sufficient fluidity is required to penetrate the interstices in the wrappings of fabric. Even Torchio, after his study of the German and the Boston installations, was averse to using oil, and it was not until after months of research that he had the novel idea of using oil, permitting it to migrate and supplying deficiencies due to migration by means of a reservoir receptacle.

Throughout all of the prior patents, publications and uses the use of a fluid oil, under those conditions where it can migrate into the cable, is avoided and rightly so because, under these conditions, the joint would be drained of oil and its insulation impaired. Torchio went directly contrary to the settled practice and opinion of the art, used a fluid oil as a saturant in the joint under conditions favoring its migration into the cable, and overcome the weakening of the joint insulation by providing a reservoir supply of oil sufficient to replace all of the oil thus lost from the joint.

Torchio's invention is in the combination of these various elements.

> "A combination is a union of elements, which may be partly old and partly new, or wholly old or wholly new. But, whether new or old, the combination is a means—an invention—distinct from them. They, if new, may be inventions and the proper subjects of patents, or they may be covered by claims in the same patent with the combination.
>
> "But whether put in the same patent with the combination, or made the subjects of separate patents, they are not identical with the combination. To become that they must be united under the same co-operative law. Certainly, one element is not the combination, nor, in any proper sense, can it be regarded as a substantive part of the invention represented by the combination, and it can make no difference whether the element was always free or becomes free by the expiration of a prior patent, foreign or domestic. In

making a combination, an inventor has the whole field of mechanics to draw from." (*Leeds & Co. v. Victor Talking Machine Co.*, 213 U. S. 301, 318.)

These novel features of the Torchio joint were successful. The close imitation and copying of the Torchio invention in defendant's joint is, in itself, a tribute to the success of the invention. The defendant praises the prior art but does not follow it. It does not use the semi-liquid saturants for the joint, but uses an oil as its impregnating compound and even uses "fairly light compounds". (R. p. 401.)

The situation is set forth in two Articles by F. P. Peterson of the defendant Company (R. pp. 392-402) which correctly describe the construction and operation of defendant's cables and joints (Interrogatories 6 and 8 and answers, R. pp. 382, 383, 385). In the Peterson Article on page 392, beginning at the bottom of the first column, it is stated—

> "At the same time difficulties with voids in the hard compounds which were unavoidably produced during filling and with charring of paper, necessitated the use of such filling compounds as petroleum and the introduction of hand wrapping, still, however, retaining the barriers. In more recent developments based on knowledge of cable breathing, migration of compound into cable, stress distribution, oil and reservoirs have been used at joints * * *."

In the Digest (R. p. 398, first column) the following is stated in regard to the oil reservoirs—

> "One of the most important features in this progress has been the introduction of oil reservoirs on potheads of cable which are operating at 27,000 volts." (End of first paragraph.)
>
> "As a result of this analysis the Brooklyn Edison Company adopted the policy at the initial installation of the 27,000 volt system in 1922, of installing oil reservoirs on the cable system wherever possible." (Top of third paragraph.)

"This practice has been expanded until it is a very general custom to use reservoirs on 27,000 volt cable joints in every manhole on the cables the Company is installing at the present time and to go back over all of the older cables and install reservoirs in locations where inferior cable is installed." (Next to last paragraph.)

In the next to the last paragraph on page 401, the author states—

"It is expected that, with the assurance of a well saturated filled cable and joint system under constant pressure slightly above atmospheric, very satisfactory results will be obtained. The use of fairly light compounds in the cable will facilitate transmission of pressure through the cable to the reservoirs."

There is no use of semi-liquid filling compounds such as proposed in the various practices prior to the Torchio patent.

The following comment of the Court in Diamond Rubber Company v. Consolidated Rubber Co., 220 U. S. 428, 440, 441, is particularly appropriate to the situation in the present case:

"The utility of the Grant patent, therefore, was not attained in the Willoughby patent. The Rubber Company's conduct is confirmation of this. It uses the Grant tire, as we shall presently see, not the Willoughby tires. Let it be granted that they afforded suggestions to Grant, and that he has gone but one step beyond them. It is conceded, as we have said, that his invention is a narrow one,—a step beyond the prior art,—built upon it, it may be, and only an improvement upon it. Its legal evasion may be the easier (Chicago & N. W. R. Co. v. Sayles, 97 U. S. 554, 556, 24 L. Ed. 1053, 1054), and hence we see the strength of the concession to its advance beyond the prior art and of its novelty and utility by the rubber company's imitation of it. The prior art was open to the rubber company. * * * And yet the rubber company uses

the Grant tire. It gives the tribute of its praise to the prior art; it gives the Grant tire the tribute of its imitation, as others have done.

* * * * * * * * *

"That the tire is an invention is fortified by all of the presumptions,—the presumption of the patent by that arising from the utility of the tire."

It is obvious that Torchio's reservoir was not only a departure from the prior art, but one that had the greatest success. These facts taken with the fact that the combination is radically new, plaintiff submits, are conclusive evidence that the Torchio invention is a novel invention.

Infringement. A comparison of the claim in issue, claim 4, and the disclaimer with the defendant's joint as described in the Peterson Article and as again reproduced on a larger scale in Exhibit 23 (R. p. 403) and Exhibit 24 (R. p. 404) will show that there is clearly an infringement of this claim. As a defense, the defendant has endeavored to show that the several elements, as elements, are individually old as, for example, that reservoirs are old, that oil as an impregnation for cables is old, etc., but, as stated in Leeds & Co. v. Victor Talking Machine Co., *supra* (213 U. S. 332, 333)—

"A combination is a composition of elements, some of which may be old and others new, or all old or all new. It is, however, the combination that is the invention, and it is as much a unit in contemplation of law as a single or non-composite instrument. Whoever uses it without permission is an infringer of it. Whoever contributes to such use is an infringer of it. It may be well here to get rid of a misleading consideration. It can make no difference as to the infringement or non-infringement of a combination that one of its elements or all of its elements are unpatented."

Defendant's defense is inadequate and it has, therefore felt it necessary to add three additional defenses which, al-

though they bulk large in the record are, in substance, mere chaff. One of these, as to Torchio's prior knowledge, is intended to show that, inasmuch as Torchio had knowledge of the English and German practice and the installation at Boston outlined above, and the use of semi-liquid impregnating materials, his invention could not be in the combination of the reservoir with a fluid oil, but must be in this combination with the copper gauze sleeve 13, 14 of the patent. The logic of this argument seems obscure, for the combination of the reservoir and reserve supply of impregnating oil with the particular joint construction being new and being definitely and unequivocally claimed as such in the claim in issue, it is not at all apparent why Torchio's knowledge of other kinds of joints should prevent him from obtaining a patent on his new combination. So far as the claim in issue, claim 4, is concerned, the fact that this claim omits the copper gauze shield whereas, other claims (claims 6 and 7) include it, is in itself ample evidence that Torchio excluded it intentionally from claim 4 and that the Patent Office in granting the patent, granted claim 4 on a combination which did not include this foraminated or gauze conducting material.

The defendant has also introduced two advertisements of 1925 and 1927, Exhibits CC and BB, respectively, and a sales letter, Exhibit S, written in 1927 by a former owner of the Torchio patent. The defendant did not take any action as a result of the advertisements or of the sales talk. It is submitted that the statements of salesmen, even if they were perfectly definite, are not competent as disclaimers of a patent. And otherwise, these advertisements and sales letter could have no bearing on infringement which, as shown in the Peterson Articles, had already begun. But the statements in the advertisements and in the letter with respect to the joint offered for sale are that it is distinguished by a "copper gauze stocking, the patented feature." (R. p. 531); and that "the big difference be-

tween this and other joints is the electrostatic shield (a Murray patent)." (R. p. 730.) But this is not tantamount to saying that the patent covered nothing but this electrostatic shield or copper gauze stocking. The fact that the patent covers the stocking or electrostatic shield is not inconsistent with the fact that it also covers the combination of the reservoir and oil supply with the joint. Claim 4 covers the latter and claims 6 and 7 the former.

The point is also made that at one time Thomas E. Murray was the owner of the patent in suit and was also a Director in the defendant Company. Mr. Murray's duties as Director had nothing to do with the installation of joints and it is not shown that he had any knowledge that his patented joints were being installed by the defendant Company, much less that he consented to or encouraged their use by defendant. Unless, therefore, the fact that he was a Director gave the defendant Company the right to appropriate his property without his knowledge or consent, it is impossible to justify defendant's infringement on the fact that Mr. Murray was at one time a Director in the defendant Company.

The function and purpose of the receptacle or reservoir in the Torchio combination is to supply liquid insulation to the joint sleeve as the latter becomes depleted. The operativeness of the combination is not questioned by defendant (R. p. 140). Defendant uses a collapsible or bellows-like receptacle, Exhibits 22 and 23 (pp. 399, 401, 403) so that as the oil or liquid insulation is drawn into the cable joint the receptacle may freely collapse. This may be an improvement on the type of receptacle shown in the Torchio patent, but its function in the combination is the same, namely, to supply oil or liquid insulation to the joint. Yet this change is brought forward by defendant as in some way avoiding or excusing the infringement.

It seems well established, however, that an infringing article is no less an infringement because it is an improvement over the patent it infringes.

Union Paper Bag Machine Co. v. Murphy, 97 U. S. 120.
Bates v. Coe, 98 U. S. 31.

CONCLUSION.

It is, therefore, respectfully submitted that the combination described in the Torchio patent here in issue and defined in claim 4 is a patentable, novel invention and is infringed by the cable joint of the defendant, and that the Decree of the Circuit Court for the Second Circuit should be reversed.

D. Anthony Usina,
Melville Church,
Counsel for Petitioner.

February 13, 1934.